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The creation of a tool to measure and visualise design effectiveness through analysis of shopper/consumer decision-making processes

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THE VALUE OF DESIGN RESEARCH

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THE CREATION OF A TOOL TO MEASURE AND VISUALISE DESIGN EFFECTIVENESS THROUGH ANALYSIS OF SHOPPER / CONSUMER DECISION-MAKING PROCESSES.

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ABSTRACT

This paper summarises the journey undertaken in order to develop the d³ tool that enables the delivery of measurable design value to client brand portfolios. The d³ tool was developed and forms part of the practice of a design consultancy operating out of London, Newcastle and Geneva with combined specialisms in packaging design, shopper marketing and digital communications.

The development of the d³ tool aims to add efficiency to the creative process by providing insightful consumer knowledge to inform design processes and marketing initiatives. It combines the concepts of power, evidence and opinion-based decision-making processes, and is used to evaluate design strategies, measure design effectiveness and identify marketing opportunities. The visual component of the d³ tool allows clients to see at a glance how effectively their brand communicates its message through packaging design, shopper marketing and digital materials in relation to their competition.

Clients include global corporations with international fast moving consumer goods brand portfolios, present in both physical and digital environments. Typical projects where the d³ tool is used include new product launches, brand design, packaging design and range extensions, digital shopper communications and point of sale materials. The ultimate purpose of the d³ tool is to assist design teams to provide creative solutions that help brands perform effectively on strategy within this cross-platform shopping environment for business success.

Keywords: Design value, design process, shopper decision-making, competitive advantage

1 INTRODUCTION

DECIDE, www.wearedecide.com, the design consultancy subject of this research is a long established business of 61 years. It employs 47 professionals across a range of disciplines; account management, strategy and planning, design, artwork, off/online branding and print management. It has a culture of continuous learning for organizational improvement to leverage a competitive advantage in each of these fields of expertise.

The consultancy has recently undergone a re-branding process to clarify and reposition its design service. Such exercise aimed to respond to the changing landscape of the shopping environment due to evolving digital technologies and increase of clients in European and Global economic markets. Shoppers and

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consumers now access multiple channels with increased choice and information on the journey to purchase.

Understanding the affect design has in this environment is critical for the design consultancy in helping it develop effective design solutions for multinational corporations included in its portfolio.

Research focus. Due to commercial pressures clients increasingly search for risk-averse strategies across brand portfolios, and look for evidence to confirm investment in design is adding value. As they seek to differentiate their rapidly evolving brands from the competition, engage with the shopper and consumer in physical and digital environments, and appeal to new markets to facilitate business growth, clients face greater pressure to appoint a design consultancy that can operate as an extension of the business and will serve its purpose well. As a result, clients are putting more projects out for competitive pitch. Therefore DECIDE is increasingly invited to pitch for the opportunity to win new projects and collaborations.

Design value is not always clearly defined and therefore the return on design investment is desirable to be measurable. In this highly competitive situation, a method to establish design effectiveness could increase the chances of winning new business. The above-mentioned commercial needs led the development of the d³ tool that enables the delivery of measurable design value.

The d³ tool was aimed at the forefront of contact with shoppers and took in consideration that for every purchase, a decision has been made to buy. Therefore, the d³ tool focused on shopper decision-making processes to better understand decision-making influences in relation to the proposed design solution. Ultimately "understanding the consumer is important for designers, in order that they can develop a conscious and subconscious understanding of consumer needs, and translate that understanding into design features" (Best, 2006).

2 METHODOLOGY

2.1 PROJECT TEAM FORMATION

The development of the d³ tool involved a team of practitioners assigned by company directors, representing design management, client services, strategy and planning, research and new business from the DECIDE consultancy along with a non-executive director appointed as an external facilitator.

Led by the associate director of design management a critical path was created to signpost key stages towards delivery of the project objectives. Collaboration of the team included twice-weekly review meetings over a period of 6 months to share, discuss and reflect on progress to inform next stage actions. The review meetings conducted in both London and Newcastle offices to align team efforts and recorded using reflective practice and action research methods. (Figure. 1)

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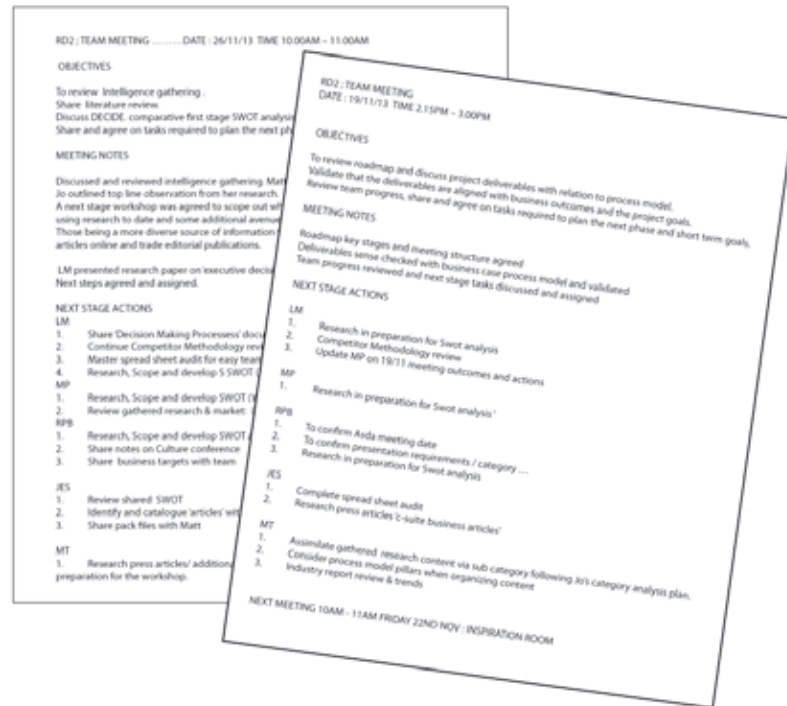


Figure 1 –Example of reflective practice & action research notation.

2.2 LITERATURE REVIEW

By conducting a literature review the team took into consideration two perspectives to gain an understanding of shopper decision making to identify an approach to assist the creation of the d³ tool.

1. Buyer decision processes and behaviours
2. Design value measurement theories, methods and tools.

CONSCIOUS DECISION MAKING. (Riley 2012) suggests that shoppers go through a systematic decision-making process when deciding to make a purchase, based on the assumption that the shopping journey begins with the recognition of a need followed by the search for information to evaluate. (Figure. 2)

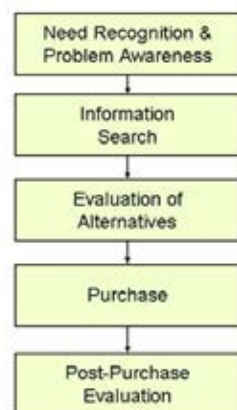


Figure 2 – Buying decision process (Riley, 2012)

The buying decision process model indicates the information search is an important determinant when employed to inform a purchase. A strategic retail survey saw that 69% of US respondents sought advice from friends and family regarding a purchase and that social media was a source of product information of 26% of respondents. (Figure. 3)

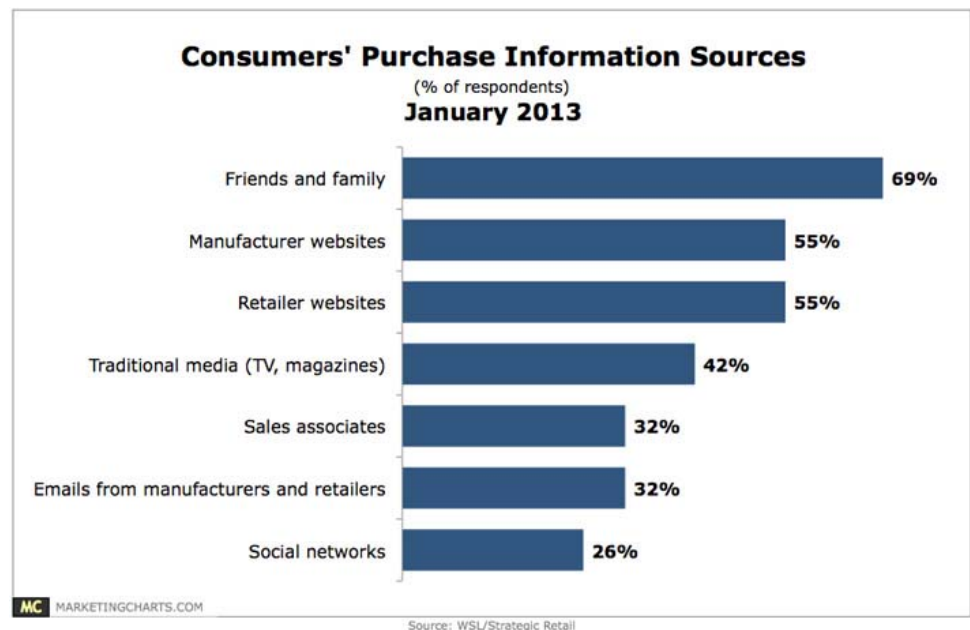


Figure 3 – WSL consumers purchase information sources (Marketing Charts Staff, 2013)

This suggests that information sources such as packaging design, shopper marketing, digital communications, advertising and advice from friends and family, could leverage influence on the purchase decision. "In the evaluation stage, the customer must choose between the alternative brands, products and services." (Riley, 2012)

UNCONSCIOUS DECISION MAKING. Buying decision process model (Figure. 2) describes a state of conscious decision-making, however, the assumption of a rational buying process shaped by a conscious recognition of need does not take into account the influence of unconscious decision-making. Research into consumer behaviour indicated that shoppers in search mode may have already made a decision to buy before entering a store, especially if they purchase in the same category of products for two or more times. "Purchasing data show that 69% of supermarket shoppers buy the same brand as they did last time they purchased from a category – and 45% buy exactly the same product." (McCann, 2014) This indicates that habits, beliefs and attitudes have a major influence on unconscious decision-making. "Human behavior often occurs outside conscious awareness and intent." (Martin and Morich, 2011).

NATURALISTIC DECISION MAKING. Research indicated that the influence of previous experience is a factor when making rapid decisions. A pioneer in the field of naturalistic decision-making (Klien, 1999) stated "Dynamic conditions (that is, a changing situation) are an important feature of naturalistic decision making." In high- pressure situations "We can use our experience to make rapid and effective decisions" (Klien, 1999). With the changing situation of multiple shopping channels being accessed, rapid decisions can be made during a

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shopping journey. Therefore, the importance of understanding the shopper's conscious and unconscious experiences with the brand is evident. The literature review highlighted the following areas of interest. Conscious and unconscious decision making processes were both found to be influential factors, from the conscious search for product information and seeking advice from friends and family, to the unconscious processes of habitual behavior, influential experiences, beliefs and attitudes. It became apparent a number of influential decision-making influences had to be considered in the development of the d³ tool.

DESIGN VALUE MEASUREMENT THEORIES AND METHODS. A number of methods researched describe a design process approach of ways to measure design value, such as the Six Sigma methodology and the data driven methodology of the DMAIC system. With the objective to develop a tool to assist design teams to provide creative solutions that help brands perform effectively on strategy a different perspective on methodology needed to be considered, one that explored the influential attributes of a design in the context of shopper decision making.

2.3 SHOPPER WORKSHOP

To support literature findings and gain a deeper understanding of shopper decision making a series of workshops were conducted with two groups of 8 shoppers male and female aged 25 - 45, one group that predominantly shopped online and one group that predominantly shopped in-store, with the aim to identify most dominant themes. A re-occurring pattern of evidence used to inform decision-making was noted where objective information and empirical evidence was used for evaluation before making a purchase decision. The influence of personal opinions had a strong connection with feelings and experiences. The mapping saw that a dominant force such as cultural beliefs or government directives such as the 'eat 5 a day' can leverage power on the decision-making process. These decision-making processes informed the development of the d³ tool process by identifying prevalent decision-making themes: Evidence where a search for information was conducted, opinions where re-assurance from others was sought (from family and friends, and the online community) and power, where an influence out of the shopper's control leveraged an affect.

A research study conducted by (Kester, Griffin, Hultink and Lauche, 2011) exploring portfolio decision-making processes indicated "The interaction between evidence-, power-, and opinion-based decision making processes" (Kester, Griffin, Hultink and Lauche, 2011) although the study was concerned with decision-making processes of portfolio management the findings were of relevance to the study and concurred decision-making themes indicated in the literature review and workshops. To help verify the findings, an analysis of the Myers Briggs Type Indicator was conducted within the preferences. This theory added value to the study as it presents seemingly random behaviour variation and describes 16 distinctive personality type preferences. Within the 16 personality types, qualities of evidence, power and opinion were noted.

2.4 PRESENTATION AND INTERVIEWS / REFLECTIVE PRACTICE

Following presentation of the workshop findings and interviews with practitioners, the concept of prevalent decision-making processes of evidence,

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opinion and power were found to be too generic to provide meaningful data and that deeper meanings were required for the d3 tool to deliver effectively. Therefore the project team re-interviewed shopper respondents to gain a deeper understanding of underlying attributes of each dominant decision-making theme. The mapping of results defined six attributes for each:

Evidence: Information, objective, empirical, analytical, understanding and trust.
Opinion: Subjective, intuitive, emotional, persuasion, culture and experience.
Power: Influential, political, forceful, empowerment, demand and dominant.

3 PROCESS OF D³ TOOL DEVELOPMENT

To measure these decision-making attributes the Likert type scale (Likert, 1932) was identified as a possible approach. Although an older perspective the scale could be helpful as it is designed to measure attitudes or opinions. Research indicated attitude and opinion were qualities of unconscious decision-making and the response to the scale required a respondent to decide. In addition the scale also has three accepted and defined components: affective, cognitive and behavioural, which were recognized as having similarities to the decision-making themes identified in the study and therefore inspired the measurement component of the d³ tool. The d³ tool required a graphic method to present measurement at a glance. Widely used bar and radar charts that plot data and communicate performance were explored. With the support of visual stimulus the team conducted a test to explore the viability to measure responses to statements, the results presented on both bar and radar chart formats. In principle the d³ tool performed well, however, too many attributes with similar meanings resulted in a lack of clarity when evaluated.

3.1 RADAR CHART

The test found the plotting of results visually reminiscent of spider chart graphics, creating a complexity that made it difficult to compare values across axes that were non-adjacent. However the nominal scale was useful, specifically when allocated to a decision-making attribute. (Figure. 4)

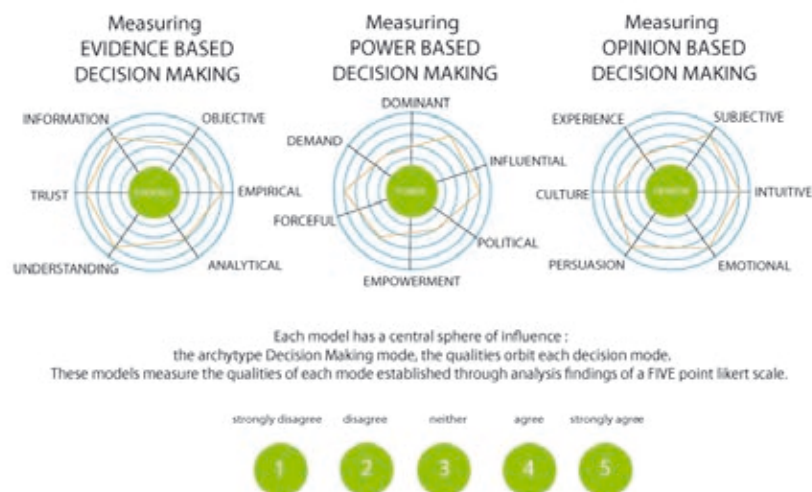


Figure 4 - Radar Chart Analysis

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3.2 BAR CHART

An ordered format was evident using the bar chart with cross axis comparison being clearer than the radar chart, however on reflection the cross axis comparison was not strictly necessary, as the intention was not to compare attributes but compare a specific attribute to a design solution. (Figure. 5)



Figure 5 - Bar chart analysis

3.3 RATIONALIZATION

For the d³ tool to be effective the project team realized the complexity created by plotting a number of charts, one for each decision-making theme was confusing, whereas a single chart would help clearly define the results. Also, decision-making attributes with similar meanings required rationalizing if the d³ tool was to deliver measureable value. A review to rationalize the attributes and identify meaningful definitions for each decision-making theme was conducted by the project team. This was of particular importance to enable the development of a structure in which to develop statements of relevance to respond to. Informed by the literature review the rationalization process resulted in the following attributes and definitions being identified.

3.4 OPINION DECISION-MAKING ATTRIBUTE DEFINITIONS

The important aspects of the three distinct attributes of opinion include a combination of identified unconscious decision-making influences, where beliefs and attitudes combined with emotional experiences can have a strong affect on a decision. "If marketing communication does not evoke an appropriate emotional response, it is less likely the message will be attended to, stored in memory or recalled." (Martin and Morich 2011) These qualities were therefore determined:

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— Subjective:

Distinctive value through a representation of an image: personal perspective, beliefs, desires or discovery.

— Experience:

Affected experiences that connect through moment-to-moment or a sensory awareness of an event.

— Emotion:

A symbolic meaning through mood or relationships with others.

3.5 EVIDENCE DECISION-MAKING ATTRIBUTE DEFINITIONS

The requirement to understand the interaction of conscious decision-making influences of information search and / or experience were found to be an important aspect of the tool. Therefore the following qualities for evidence based decision-making were determined:

— Objective:

What is it? A decision influenced by considering & communication of facts.

— Understanding:

What is it saying? Obtaining a full understanding of message.

— Empirical:

I know because I've observed or experienced rather than theory or pure logic.

3.6 POWER DECISION-MAKING ATTRIBUTE DEFINITIONS

In addition the conscious decision-making influences that dictate a course of action or a dominant influence to assert an effect on a behaviour, were recognized as aspects to represent in the d³ tool to give a macro view of decision-making influences. "A small difference that makes a large difference, a small change that can turn a situation around ... the search for leverage points is about finding those openings and making them work." (Klien, G. 1999) These qualities were therefore identified as:

— Dominant:

Differentiation. A decision strongly influenced from a position of superior strength

— Influential:

Product benefits exerting a compelling influence on or producing an effect on behaviour or opinions.

— Forceful:

Action to change through an assertive and dynamic quality that effectively influences people's thoughts and ideas.

4 INTRODUCING THE D³ TOOL

The d³ tool now embodied a methodology to record and present knowledge, with integrated meanings of combined decision-making influences of evidence, opinion and power found to be present during the shopper journey. The model was therefore termed as the d³ tool, an analysis of shopper decision-making to the power of 3, representing both macro and micro influences that research found evident during the study.

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The knowledge gained through the application of the d³ tool expected to assist the designer in creating an effective solution anchored in the context of shopper decision-making processes, with potential to be used to evaluate design in relation to project brief and design development during the iterative journey of a project. (Figure. 6)



Figure 6 – Visualization of developed d³ tool. The dominant decision-making themes configured on the radar chart with their definitions represented in segments.

4.1 VALIDATION OF THE D3 TOOL THROUGH APPLICATION ON LIVE PROJECT.

To test the d³ tool in action, a pilot application was conducted during the creative development of a packaging design project. Members of the strategy and design team were assigned to evaluate the design of a current Fortnum & Masons Royal Blend Tea pack by responding to 9 statements designed to probe for design performance in the context of client brief objectives in relation to the defined attributes of shopper decision-making processes. (Figure. 7)



Figure 7 - F&M Statements

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The d³ tool demonstrated that current packaging did not perform well regarding product communication, that taste appeal was lacking and the gunmetal steel finish did not appear to help navigation of the tea fixture. The iconic brand mark however was found to be a strong influence. (Figure. 8) The evaluation concurred with client brief and indicated areas of action to improve the design.



Figure 8 - F&M current design evaluation

4.2 FINDINGS OF PILOT APPLICATION OF THE TOOL

The d³ tool findings were applied to inform the creative development of the packaging design. Specifically in areas of action, to improve product differentiation and taste appeal of the tea range in the Piccadilly flagship store and in export markets, whilst visually encapsulating the powerful brand essence of being 'Quintessentially English'. Following a number of design iterations the new design was evaluated on the same premise as the current design to provide a like for like comparative analysis. The tool demonstrated the following design improvement on areas of action. Legible fonts improved product communication, flavour and product differentiation were made more effective through tea range colour coding. (Figure. 9)



Figure 9 - F&M Tea range, new design

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Figure 10 - F&M new design evaluation

The application of 'Eau de Nil' colour, traditionally associated with the Fortnum's brand to the Famous House Teas appeared to reinforce the dominance of the Fortnum & Mason brand mark. (Figure. 10)

Since the launch of the new design, sales figures across the range have experienced a significant uplift, with certain products achieving increase in sale volume of over 1,000%. The application of the tool helped guide and define design development stages throughout the process, the final measurement indicating where specifically the new design had added value. (Figure. 11)



Figure 11 - F&M Tea range, design performance evaluation.

Two further studies were conducted in order to explore whether the application of the d³ tool could provide meaningful knowledge in relation to the variables of digital and shopper marketing design processes. The results demonstrated that the d³ tool provided an evaluation of the performance of the design and areas of improvement as experienced when applied to the Fortnum & Mason project.

The pilot applications demonstrated the effectiveness of the d³ tool methodology to collect data and provided a simple to understand visualization. However, the pilot applications had not been performed in a 'real' environment, with the shopper in an everyday shopping mindset, from research this context could be

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very important for the quality of response and therefore the quality of the creative interpretation. In addition the potential responses could be compromised due to social desirability. Pilot application 2 was therefore conducted anonymously. "Some researchers are beginning to incorporate observation techniques and deep interviewing to access insights beyond the conscious level. And as automaticity research has demonstrated, consumers often do not have access to the internal mechanisms that drive their decisions." (Martin and Morich, 2011)

4.3 PILOT APPLICATION 2 TEST IN MARKET

A speculative inquiry was identified; people looking for a meat free protein alternative to meat sausages for medical or lifestyle reasons, to explore decision-making biases to test the d³ tool with data collected from a real shopping environment by conducting an independent shop. A Quorn product inquiry was mapped to enable the design of measurable statements. (Figure.12)

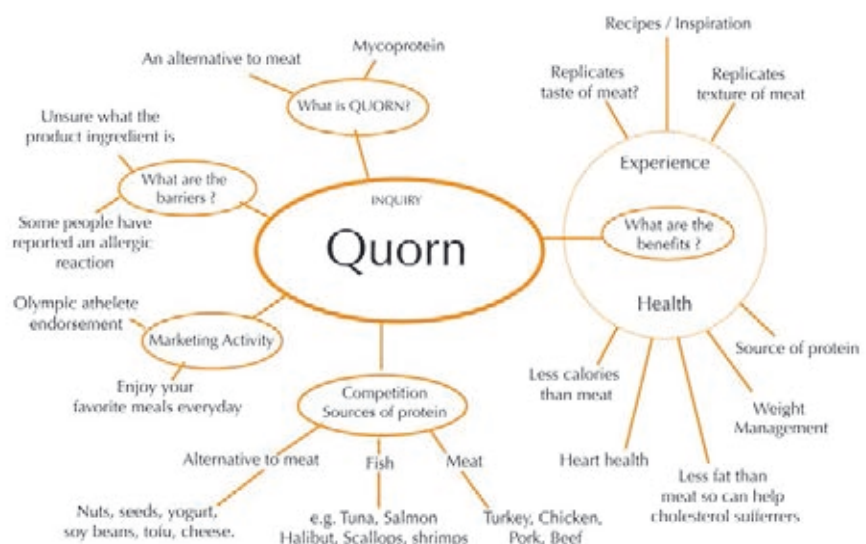


Figure 12 - Quorn Mapping

10 shoppers aged 28 – 60 were recruited through profiling questions to ensure representation of the target audience. Statements designed to probe for a response to help understand what convinces the shopper to choose Quorn as an alternative source of protein to meat when looking at the pack design were given to the respondents. Respondents were asked to consider buying meat free sausages during their next shop and asked to note their response to the statements, and also note the reason for the response.

4.4 FINDINGS OF PILOT APPLICATION 2 TEST IN MARKET

The application of the d³ tool indicated there was a positive response to the pack design and the product messaging was understood. The brand's unique visual equities and brand messaging had good recognition, however the pack did not influence consumers to trial. 70% of respondents had not tried the product and though the majority of respondents agreed the product could be an alternative diet choice 44% did not appear to have an emotional attachment to the brand, indicating a brand strategy that aims to engage the shopper through design on an emotional level could influence trial. (Figure.13)



Figure 13. Pilot 2 application, test in market: results.

5 CONCLUSION

The development of the d³ tool and its application suggest that by combining a scale to measure attitudes with a questionnaire to understand the shopper attitude, deeper meanings can be attained. The evaluation of a design provided useful statistics in the context of the concept of three decision-making processes, a combination of power, evidence and opinion. Meaningful knowledge assisted the design process to create an effective design solution. The segmentation of the model highlighted specific design challenges that the creative team were able to identify and address. The d³ tool allowed the iterative process of design development stages to be focused through evaluation, and when employing comparative analysis, it was possible to interpret where design value had been added or where it was weak. For the design team the d³ tool demonstrates value as a method to evaluate creative work to confirm creative direction or a method to discover new opportunities for strategic direction. From a client perspective the d³ tool can provide underlying evidence to support brand plan initiatives and inform the creative brief.

The visualization of the d³ tool helps differentiate design value in relation to other marketing activities that contribute to the return on investment. The Fortnum and Mason new packaging launch had no marketing support therefore the results on this project were an indicator of the effectiveness of applying the findings of the d³ tool to the packaging design.

It is evident from this study that shopper decision-making processes are extremely complex with many variables. The concept provides an avenue for further investigation into shopper decision-making processes to understand interrelationships and other potential interactions of influence. It also provides a platform to further explore design evaluation methods that apply specific determinants.

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